

Claims:

1. An isolated nucleic acid molecule encoding a hyperimmune serum reactive antigen or a fragment thereof comprising a nucleic acid sequence, which is selected from the group consisting of:
 - a) a nucleic acid molecule having at least 70% sequence identity to a nucleic acid molecule selected from Seq ID No 14, 90, 157-216,
 - b) a nucleic acid molecule which is complementary to the nucleic acid molecule of a),
 - c) a nucleic acid molecule comprising at least 15 sequential bases of the nucleic acid molecule of a) or b)
 - d) a nucleic acid molecule which anneals under stringent hybridisation conditions to the nucleic acid molecule of a), b), or c)
 - e) a nucleic acid molecule which, but for the degeneracy of the genetic code, would hybridise to the nucleic acid molecule defined in a), b), c) or d).
2. The isolated nucleic acid molecule according to claim 1, wherein the sequence identity is at least 80%, preferably at least 95%, especially 100%.
3. An isolated nucleic acid molecule encoding a hyperimmune serum reactive antigen or a fragment thereof comprising a nucleic acid sequence selected from the group consisting of
 - a) a nucleic acid molecule having 96 % or more than 96 %, preferably at least 98 %, especially 100 % sequence identity to a nucleic acid molecule selected from Seq ID No 1, 3, 5-13, 15, 18-25, 27-31, 33-36, 39-68, 70-85, 92-100, 103-126, 128-145, 147, 149-156, 217, 435-448 and 463-474.
 - b) a nucleic acid molecule which is complementary to the nucleic acid molecule of a),
 - c) a nucleic acid molecule comprising at least 15 sequential bases of the nucleic acid molecule of a) or b)
 - d) a nucleic acid molecule which anneals under stringent hybridisation conditions to the nucleic acid molecule of a), b) or c),
 - e) a nucleic acid molecule which, but for the degeneracy of the genetic code, would hybridise to the nucleic acid defined in a), b), c) or d).
4. An isolated nucleic acid molecule encoding a hyperimmune serum reactive antigen or a fragment thereof comprising a nucleic acid sequence selected from the group consisting of
 - a) a nucleic acid molecule having 98 % or more than 98%, especially 100 % sequence identity to a nucleic acid molecule selected from Seq ID No 32, 86, 91, 101, 127,
 - b) a nucleic acid molecule which is complementary to the nucleic acid of a),
 - c) a nucleic acid molecule which, but for the degeneracy of the genetic code, would hybridise to the nucleic acid defined in a), b), c) or d).
5. The nucleic acid molecule according to any one of the claims 1, 2, 3 or 4, wherein the nucleic acid is DNA.
6. The nucleic acid molecule according to any one of the claims 1, 2, 3, 4, or 5 wherein the nucleic acid is RNA.
7. An isolated nucleic acid molecule according to any one of claims 1 to 5, wherein the nucleic acid molecule is isolated from a genomic DNA, especially from a *S. agalactiae* genomic DNA.
8. A vector comprising a nucleic acid molecule according to any one of claims 1 to 7.
9. A vector according to claim 8, wherein the vector is adapted for recombinant expression of the hyperimmune serum reactive antigens or fragment thereof encoded by the nucleic acid molecule according to any one of claims 1 to 7.

10. A host cell comprising the vector according to claim 8 or 9.
11. A hyperimmune serum-reactive antigen comprising an amino acid sequence being encoded by a nucleic acid molecule according to any one of the claims 1, 2, 5, 6 or 7 and fragments thereof, preferably the amino acid sequence is selected from the group consisting of Seq ID No 231, 307, 374-433.
12. A hyperimmune serum-reactive antigen comprising an amino acid sequence being encoded by a nucleic acid molecule according to any one of the claims 3, 5, 6, or 7 and fragments thereof, preferably the amino acid sequence is selected from the group consisting of Seq ID No 218, 220, 222-230, 232, 235-242, 244-248, 250-253, 256-285, 287-302, 309-317, 320-343, 345-362, 364, 366-373, 434, 449-462 and 475-486.
13. A hyperimmune serum-reactive antigen comprising an amino acid sequence being encoded by a nucleic acid molecule according to any one of the claims 4, 5, 6, or 7 and fragments thereof, preferably the amino acid sequence is selected from the group consisting of Seq ID No 249, 303, 308, 318, 344.
14. Fragments of hyperimmune serum-reactive antigens selected from the group consisting of peptides comprising amino acid sequences of column "predicted immunogenic aa" and "location of identified immunogenic region" of Table 1A, especially peptides comprising amino acid 4-20, 35-44, 65-70, 73-87, 92-98, 112-137, 152-161, 177-186, 193-200, 206-213, 229-255, 282-294, 308-313, 320-326, 349-355, 373-384, 388-406, 420-425 and 115-199 of Seq ID No 218; 5-24, 35-41, 44-70, 73-89, 103-109, 127-143, 155-161, 185-190, 192-207, 212-219, 246-262, 304-336, 372-382, 384-393, 398-407, 412-418, 438-444, 1-75, 76-161 and 164-239 of Seq ID No 219; 4-10, 16-58, 60-71, 77-92, 100-126, 132-146, 149-164, 166-172, 190-209, 214-220, 223-229, 241-256, 297-312, 314-319, 337-343, 351-359, 378-387, 398-418, 421-428, 430-437, 440-448, 462-471, 510-519, 525-536, 552-559, 561-568, 573-582, 596-602, 608-630, 637-649, 651-665, 681-702, 714-732, 739-745, 757-778, 790-805, 807-815, 821-829, 836-842, 846-873, 880-903, 908-914, 916-923, 931-940, 943-948, 956-970, 975-986, 996-1015, 1031-1040, 1051-1069, 1072-1095, 1114-1119, 1130-1148, 1150-1157, 1169-1176, 1229-1238 and 802-812 of Seq ID No 220; 5-12, 14-26, 35-47, 52-67, 72-78, 83-98, 121-141, 152-159, 163-183, 186-207, 209-257, 264-277, 282-299, 301-309, 312-318, 324-339, 358-368, 372-378, 387-397, 425-431 and 46-291 of Seq ID No 221; 29-38, 44-64, 70-76, 78-87, 94-100, 102-112, 119-134, 140-149, 163-173, 178-186, 188-194, 207-234, 247-262, 269-290 and 73-92 of Seq ID No 222; 10-28, 36-63, 77-87, 103-119, 127-136, 141-169, 171-183, 195-200, 207-232, 236-246, 251-265, 268-283, 287-297, 314-322, 335-343, 354-363, 384-390, 405-411, 419-436, 443-455, 467-473, 480-513, 518-529, 550-557, 565-585, 602-608, 616-625, 632-660, 665-677, 685-701, 726-736, 738-747, 752-761, 785-796, 801-813, 838-853, 866-871 and 757-774 of Seq ID No 223; 31-38, 61-66, 74-81, 90-115, 123-145, 154-167, 169-179, 182-193, 200-206, 238-244, 267-272 and 235-251 of Seq ID No 224; 19-25, 38-54, 56-64, 66-72, 74-92, 94-100, 116-129, 143-149, 156-183, 204-232, 253-266, 269-275, 294-307 and 241-313 of Seq ID No 225; 5-34, 50-56, 60-65, 74-85, 89-97, 108-119, 159-165, 181-199, 209-225, 230-240, 245-251, 257-262, 274-282, 300-305 and 64-75 of Seq ID No 226; 5-13, 16-21, 27-42, 45-52, 58-66, 74-87, 108-114, 119-131 and 39-51 of Seq ID No 227; 6-23, 46-54, 59-65, 78-84, 100-120, 128-133, 140-146, 159-165, 171-183, 190-204, 224-232, 240-248, 250-259, 274-280, 288-296, 306-315 and 267-274 of Seq ID No 228; 5-12, 15-24, 26-36, 42-65, 68-80, 82-104, 111-116, 125-144, 159-167, 184-189, 209-218, 235-243, 254-265, 269-283, 287-300, 306-316, 318-336, 338-352, 374-392 and 162-174 of Seq ID No 229; 30-42, 45-54 and 25-37 of Seq ID No 230; 10-30, 53-59, 86-95, 116-130, 132-147, 169-189, 195-201, 212-221, 247-256, 258-265, 278-283, 291-298, 310-316, 329-339, 341-352, 360-367, 388-396, 398-411, 416-432, 443-452, 460-466, 506-512, 515-521, 542-548 and 419-431 of Seq ID No 231; 4-27, 30-53, 60-67, 70-90, 92-151, 159-185, 189-195, 198-210, 215-239 and 173-189 of Seq ID No 232; 4-26, 41-54, 71-78, 116-127, 140-149, 151-158, 161-175, 190-196, 201-208, 220-226, 240-252, 266-281, 298-305,

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254, 259-264, 278-292, 294-312, 319-330 and 167-191 of Seq ID No 357; 7-28, 36-42, 50-61, 63-80, 122-152, 161-174, 176-191 and 140-190 of Seq ID No 358; 20-57, 59-65, 70-78, 86-102, 119-133, 142-161, 163-173, 177-188, 192-202, 204-220, 222-236, 240-253, 279-319, 326-331, 337-383, 390-399, 406-412, 420-427, 431-438 and 381-395 of Seq ID No 359; 13-18, 28-34, 37-43, 50-59, 75-81, 83-97, 105-121, 139-147, 200-206, 209-227, 231-247, 260-271, 318-327, 366-381, 388-394, 399-406 and 182-201 of Seq ID No 360; 6-29, 37-43, 51-56, 70-77, 82-102, 110-119, 127-143, 178-190, 201-209, 216-243, 261-269, 281-292, 305-313, 327-339, 341-354, 356-373, 391-397, 423-429, 438-445, 450-478 and 21-314 of Seq ID No 361; 4-12, 15-21, 32-41, 59-76, 80-89, 96-104 and 90-103 of Seq ID No 362; 9-28, 30-41, 44-54, 69-74, 77-82, 90-97, 104-123, 125-135, 149-155, 164-173, 177-184, 217-226, 230-235, 238-244, 258-272, 282-297, 300-305, 309-315, 317-322, 327-336, 348-362, 368-374, 380-387, 400-411, 414-424, 451-458, 460-466, 483-494, 497-503, 506-511, 521-528, 540-553, 569-587, 598-606, 628-642, 661-681, 688-700, 718-733, 740-749, 752-764, 769-783, 823-834, 848-854, 862-872, 878-884, 886-898, 915-920, 938-951, 954-961, 963-972, 982-989, 996-1003, 1010-1016, 1021-1032, 1038-1044, 1047-1057, 1060-1070, 1079-1088, 1094-1102, 1117-1127, 1129-1135, 1142-1153, 1158-1204, 1212-1229, 1234-1263, 1269-1277, 1308-1313, 1327-1338, 1344-1376, 1400-1415, 1436-1443, 1448-1458, 1497-1504, 1511-1522, 1544-1566, 3-82 and 509-576 of Seq ID No 363; 8-36, 40-64, 71-79, 88-94, 102-109, 118-127, 138-148, 151-159, 163-174, 192-198, 200-206, 220-233, 268-273, 290-301, 304-309, 316-323, 331-349, 378-391, 414-420, 427-437, 455-475, 494-510, 541-547, 549-555, 616-640, 1-60, 55-139, 212-308, 386-458 and 458-624 of Seq ID No 364; 16-31, 35-42, 70-77, 91-101, 120-130, 132-140, 143-153, 185-190, 195-202, 215-222, 228-238, 241-251, 257-264, 268-277, 288-302, 312-324, 326-333, 341-348, 364-382, 415-429, 438-454, 458-466, 491-499, 501-521 and 273-281 of Seq ID No 365; 8-14, 32-57, 74-149, 155-177, 179-212, 221-266, 271-296, 304-324, 329-346, 349-359, 368-401, 413-419, 426-454, 465-478, 493-510 and 466-490 of Seq ID No 366; 22-28, 33-51, 64-89, 96-119, 126-132, 138-146, 152-159, 161-169, 172-179, 193-198, 205-211, 221-231, 235-254, 273-280, 297-303, 312-320, 328-346, 351-373, 378-384, 391-398, 448-454, 460-468, 470-481, 516-558, 574-593, 597-602, 613-623, 626-646, 649-656, 668-673, 675-683, 696-708, 715-722, 724-739, 745-751, 759-777, 780-804, 816-822 and 102-113 of Seq ID No 367; 12-28, 41-91, 98-107, 112-120, 125-131, 151-193, 215-221, 240-250, 263-280 and 128-138 of Seq ID No 368; 16-24, 32-38, 46-62, 68-81, 90-105, 127-133, 144-150, 160-166, 178-184, 186-202, 210-219, 232-240, 252-258, 264-273, 293-324, 337-344, 349-357, 360-369, 385-398, 410-416, 419-427, 441-449, 458-476, 508-515, 523-539, 544-549, 562-569, 571-579, 96-109 and 127-139 of Seq ID No 369; 19-25, 28-34, 56-61, 85-97, 110-116 and 39-53 of Seq ID No 370; 4-37, 41-50, 62-72, 91-97, 99-109, 114-125, 136-141, 149-158, 160-166, 201-215 and 27-225 of Seq ID No 371; 15-31, 44-51, 96-105, 122-130, 149-157, 162-168, 178-183, 185-192, 198-204, 206-213, 221-234, 239-245, 248-255, 257-266, 289-335, 349-357, 415-422, 425-441, 448-454, 462-468 and 463-481 of Seq ID No 372; 5-31, 39-55, 63-72, 76-99, 106-155, 160-177, 179-199, 207-217, 223-240, 245-255, 261-267, 294-316, 321-343, 354-378, 382-452, 477-488, 529-536, 555-569, 584-591, 593-612, 620-627, 632-640, 647-654, 671-680, 698-704, 723-730, 732-750, 769-775, 781-788, 822-852 and 505-525 of Seq ID No 373; 3-18 of Seq ID No 374; 4-14 and 12-24 of Seq ID No 375; 4-11, 22-30 and 12-25 of Seq ID No 376; 5-12 and 4-18 of Seq ID No 377; 4-28 and 7-14 of Seq ID No 378; 6-16 and 8-16 of Seq ID No 379; 4-15, 18-33 and 24-36 of Seq ID No 380; 4-10, 16-21 and 20-31 of Seq ID No 381; 6-19 of Seq ID No 382; 11-18 and 3-10 of Seq ID No 383; 13-24 and 3-15 of Seq ID No 384; 15-27 and 7-16 of Seq ID No 385; 11-16 and 1-15 of Seq ID No 386; 4-16 and 9-21 of Seq ID No 387; 4-24, 40-48, 54-67 and 22-39 of Seq ID No 388; 6-30, 34-55, 62-68, 78-106 and 68-74 of Seq ID No 389; 3-14 of Seq ID No 390; 9-19 and 6-21 of Seq ID No 391; 4-17 and 1-9 of Seq ID No 392; 5-30 and 1-8 of Seq ID No 393; 4-16, 23-46, 51-56 and 45-55 of Seq ID No 394; 7-16 of Seq ID No 395; 2-14 of Seq ID No 396; 4-36, 43-65 and 50-62 of Seq ID No 397; 10-30 and 14-21 of Seq ID No 398; 9-17 and 1-10 of Seq ID No 399; 4-12 and 3-16 of Seq ID No 400; 4-15 and 5-23 of Seq ID No 401; 10-21 of Seq ID No 402; 6-16 of Seq ID No 403; 4-29, 31-38 and 2-14 of Seq ID No 404; 4-35 and 33-42 of Seq ID No 405; 2-17 of Seq ID No 406; 9-18, 30-35 and 15-33 of Seq ID No 407; 4-9 and 6-12 of Seq ID No 408; 3-17 of Seq ID No 409; 12-21, 37-44, 52-61, 72-80 and 38-48 of Seq ID No 410; 4-10, 29-44, 54-61, 69-78 and 13-27 of Seq ID No 411; 13-23, 36-53 and 2-15 of Seq ID No 412; 4-25, 28-46, 56-72, 81-99, 120-132, 134-142, 154-160 and 129-141 of Seq ID No 413; 4-15, 24-33, 35-41, 64-86 and 21-33 of Seq ID No 414; 9-15 and 4-13 of Seq ID No 415; 4-11, 13-19, 34-48 and 15-32 of Seq ID No 416; 4-21 and 11-31 of Seq ID No 417; 23-57 and 38-

50 of Seq ID No 418; 4-32 and 3-13 of Seq ID No 419; 4-10, 13-25, 32-42, 56-68, 72-84 and 26-38 of Seq ID No 420; 4-20, 31-48, 52-58, 65-71, 80-93, 99-108, 114-123 and 37-49 of Seq ID No 421; 6-12, 14-20 and 3-25 of Seq ID No 422; 14-25, 27-38 and 5-14 of Seq ID No 423; 4-41, 57-105, 109-118, 123-136, 144-152 and 86-99 of Seq ID No 424; 6-19 of Seq ID No 425; 2-19 of Seq ID No 426; 14-47 and 1-14 of Seq ID No 427; 4-21, 29-44 and 2-18 of Seq ID No 428; 23-29 and 10-28 of Seq ID No 429; 6-16, 22-36 and 11-22 of Seq ID No 430; 4-19, 30-44 and 18-27 of Seq ID No 431; 5-15, 37-45, 58-65 and 38-47 of Seq ID No 432; 4-15, 23-34 and 4-15 of Seq ID No 433; 30-36, 44-54, 79-85, 101-114, 138-152, 154-164, 170-175, 179-200, 213-220, 223-240, 243-255, 258-264, 268-284 and 10-28 of Seq ID No 434; the peptides comprising amino acid sequences of column "Identical region" of the Table 1B, especially peptides comprising amino acid 210-226 and 738-753 of Seq ID No 449; 326-344, 326-348, 338-354, 371-392, 801-809 and 877-901 of Seq ID No 450; 893-906 of Seq ID No 451; 51-69 of Seq ID No 452; 110-125 of Seq ID No 453; 291-305 of Seq ID No 454; 210-226 and 738-753 of Seq ID No 455; 326-344, 326-348, 338-354, 371-392, 801-809 and 877-901 of Seq ID No 456; 893-906 of Seq ID No 457; 51-69 of Seq ID No 458; 110-125 of Seq ID No 459; 291-305 of Seq ID No 460; 32-44 of Seq ID No 461; 399-410 of Seq ID No 462; the serum reactive epitopes as specified in the column of "aa from" to "aa to" of Table 2, especially peptides comprising amino acid 120-143, 138-161 and 156-179 of Seq ID No 218; 110-129 and 168-184 of Seq ID No 219; 74-90 of Seq ID No 222; 759-773 of Seq ID No 223; 237-260 of Seq ID No 224; 265-284 of Seq ID No 225; 65-74 of Seq ID No 226; 41-50 of Seq ID No 227; 163-174 of Seq ID No 229; 26-37 of Seq ID No 230; 174-189 of Seq ID No 232; 240-256 of Seq ID No 234; 285-297 of Seq ID No 236; 238-247 of Seq ID No 238; 491-519 of Seq ID No 239; 114-140 of Seq ID No 243; 267-284 of Seq ID No 250; 439-453 of Seq ID No 252; 162-178 of Seq ID No 253; 347-364 of Seq ID No 254; 699-715 of Seq ID No 255; 60-71 of Seq ID No 256; 244-257 of Seq ID No 257; 44-63 and 57-76 of Seq ID No 258; 185-196 of Seq ID No 260; 119-129 of Seq ID No 263; 182-195 of Seq ID No 266; 32-44 and 424-442 of Seq ID No 267; 247-256 of Seq ID No 268; 678-694, 785-805, 55-77 and 72-94 of Seq ID No 269; 210-226 of Seq ID No 281; 37-59 of Seq ID No 289; 13-29 of Seq ID No 296; 136-159 of Seq ID No 348; 205-222 of Seq ID No 349; 99-110 of Seq ID No 350; 160-176 of Seq ID No 351; 457-470 of Seq ID No 355; 221-237 of Seq ID No 356; 167-190 of Seq ID No 357; 96-120 of Seq ID No 361; 399-417, 503-519 and 544-563 of Seq ID No 364; 46-68, 159-183 and 184-198 of Seq ID No 371; 463-481 of Seq ID No 372; the immunogenic epitopes as specified in the column of "aa from" to "aa to" of Table 4; especially peptides comprising amino acid 110-129 and 168-184 of Seq ID No 219; 877-901, 333-354, 326-344 and 801-809 of Seq ID No 277; 1-54 of Seq ID No 347; 544-563, 31-51, 107-119, 399-417 and 503-519 of Seq ID No 364; 120-198 of Seq ID No 218; 20-35 of Seq ID No 219; 118-201 of Seq ID No 221; 48-132 of Seq ID No 242; 118-136 of Seq ID No 249; 162-178 of Seq ID No 253; 347-364 of Seq ID No 254; 699-715 of Seq ID No 255; 50-76 of Seq ID No 258; 785-819 and 44-128 of Seq ID No 269; 90-128 of Seq ID No 274; 314-384 of Seq ID No 289; 327-349 of Seq ID No 293; 242-314, 405-478 and 23-100 of Seq ID No 304; 129-210 of Seq ID No 305; 162-188 of Seq ID No 307; 750-772 of Seq ID No 310; 1-56 of Seq ID No 335; 322-337 of Seq ID No 337; 72-90 of Seq ID No 339; 374-395 of Seq ID No 345; 136-159 of Seq ID No 348; 141-164 of Seq ID No 358; 96-157 of Seq ID No 361; 1-82 of Seq ID No 363; 489-556 of Seq ID No 364; 159-183 and 49-133 of Seq ID No 371; The peptides comprising amino acid sequences of column "predicted immunogenic aa" and "location of identified immunogenic region (aa)" of Table 5, especially peptides comprising amino acid 4-26, 35-41, 53-61, 73-84, 103-108, 114-120, 140-146, 156-162, 192-208, 214-219, 227-233, 239-252, 260-268, 284-297, 1-48 and 113-133 of Seq ID No 475; 4-27, 38-44, 50-56, 59-64, 72-79, 83-89, 92-97, 108-116, 123-148, 152-167, 183-196, 200-220, 232-244, 255-261, 265-274, 282-302, 309-317, 1-79 and 231-302 of Seq ID No 476; 6-28, 66-72, 85-105, 115-121, 144-151, 160-170, 176-185, 223-230, 252-288, 296-310, 319-333, 367-374, 458-464, 471-480, 483-488, 520-528, 530-549, 559-564, 593-601, 606-616, 636-643, 655-662, 676-682, 684-699, 719-726, 735-750, 757-764, 777-785, 799-810, 812-843, 846-853, 868-873, 880-889, 891-899, 909-929, 934-940, 963-969, 998-1004, 1007-1014, 1016-1022, 1030-1046, 1-80 and 808-821 of Seq ID No 477; 7-24, 35-41, 75-81, 91-114, 122-132, 137-144, 148-156, 183-192, 194-200, 212-228, 233-238, 251-258, 275-295, 326-332, 337-346, 1-79 and 305-321 of Seq ID No 478; 31-38, 42-52, 66-72, 86-92, 98-104, 115-122, 127-146, 154-164, 169-187, 198-212, 225-237, 255-269, 13-92 and 135-142

of Seq ID No 479; 4-36, 39-49, 63-69, 71-77, 81-88, 123-131, 133-139, 160-169, 174-180, 188-194, 210-217, 273-278, 289-300, 317-334, 336-341, 383-401, 425-438, 1-68, 212-270 and 402-446 of Seq ID No 480; 21-29, 31-42, 49-63, 72-79, 81-93, 112-132, 159-165, 188-195, 197-232, 262-267, 279-286, 294-301, 318-326, 348-366, 381-405, 409-426, 436-465, 471-480, 484-492, 497-505, 521-544, 554-561, 567-577, 581-589, 601-609, 611-622, 636-651, 653-667, 669-685, 700-708, 716-722, 729-744, 749-766, 780-786, 789-811, 814-864, 1-57 and 84-106 of Seq ID No 481; 6-24, 35-48, 57-63, 72-78, 87-92, 113-119, 123-137, 147-153, 173-181, 212-233 and 1-124 of Seq ID No 482; 13-34, 62-69, 78-83, 86-91, 98-104, 107-115, 146-159, 179-188, 195-205, 209-221, 226-233, 239-253, 276-282, 284-294, 297-308, 331-354, 375-382, 388-399, 421-433, 449-458, 464-469, 472-491, 508-513, 525-531, 534-550, 575-593, 601-618, 629-635, 654-661, 666-680, 706-721, 723-740, 771-805, 810-830, 845-851 and 1-84 of Seq ID No 483; 4-32, 45-64, 73-83, 86-92, 100-111, 125-147, 157-163, 170-175, 177-188, 226-232, 245-252, 258-274, 320-335, 348-359 and 1-71 of Seq ID No 484; 13-40, 43-71, 76-83, 87-101, 109-119, 125-156, 162-175, 182-219, 226-232, 240-262, 270-287, 306-318, 326-342, 344-408, 414-444, 449-456 and 1-51 of Seq ID No 485; 4-16, 18-34, 45-54, 99-108, 134-140, 203-212, 241-257, 266-274, 279-291, 308-315, 330-336, 355-370, 374-382, 402-410, 428-455, 466-472, 474-480, 531-554, 560-566, 572-580, 597-618, 632-660, 664-674, 676-685, 691-705, 708-735, 750-768, 1-87 and 342-480 of Seq ID No 486; The serum reactive epitopes as specified in the column of "aa from" to "aa to" of Table 6, especially peptides comprising amino acid 115-132 and 1-26 of Seq ID No 475; 33-55 of Seq ID No 476; 1-25 of Seq ID No 478; 37-61 of Seq ID No 479; 1-24 of Seq ID No 480; 1-23 of Seq ID No 481; 46-60 of Seq ID No 482; 1-28, 23-50 and 45-71 of Seq ID No 483; 1-22 and 17-38 of Seq ID No 484; 1-22 and 17-38 of Seq ID No 485; 1-27, 22-47 and 422-447 of Seq ID No 486; The immunogenic epitopes as specified in the column of "aa from" to "aa to" of Table 7, especially peptides comprising amino acid 115-132 and 1-47 of Seq ID No 475; 1-55 of Seq ID No 476; 22-85 of Seq ID No 477; 307-320 and 1-44 of Seq ID No 478; 15-76 and 40-92 of Seq ID No 479; 1-59, 213-269 and 403-445 of Seq ID No 480; 1-56 and 85-105 of Seq ID No 481; 37-121 of Seq ID No 482; 1-71 of Seq ID No 483; 1-38 of Seq ID No 484; 1-38 of Seq ID No 485; 1-47 of Seq ID No 486.

15. A process for producing a *S. agalactiae* hyperimmune serum reactive antigen or a fragment thereof according to any one of the claims 11 to 14 comprising expressing the nucleic acid molecule according to any one of claims 1 to 7.
16. A process for producing a cell, which expresses a *S. agalactiae* hyperimmune serum reactive antigen or a fragment thereof according to any one of the claims 11 to 14 comprising transforming or transfecting a suitable host cell with the vector according to claim 8 or claim 9.
17. A pharmaceutical composition, especially a vaccine, comprising a hyperimmune serum-reactive antigen or a fragment thereof, as defined in any one of claims 11 to 14 or a nucleic acid molecule according to any one of claims 1 to 7.
18. A pharmaceutical composition, especially a vaccine, according to claim 17, characterized in that it further comprises an immunostimulatory substance, preferably selected from the group comprising polycationic polymers, especially polycationic peptides, immunostimulatory deoxynucleotides (ODNs), peptides containing at least two LysLeuLys motifs, neuroactive compounds, especially human growth hormone, alum, Freund's complete or incomplete adjuvants or combinations thereof.
19. Use of a nucleic acid molecule according to any one of claims 1 to 7 or a hyperimmune serum-reactive antigen or fragment thereof according to any one of claims 11 to 14 for the manufacture of a pharmaceutical preparation, especially for the manufacture of a vaccine against *S. agalactiae* infection.
20. An antibody, or at least an effective part thereof, which binds at least to a selective part of the

hyperimmune serum-reactive antigen or a fragment thereof according to any one of claims 11 to 14.

21. An antibody according to claim 20, wherein the antibody is a monoclonal antibody.
22. An antibody according to claim 20 or 21, wherein said effective part comprises Fab fragments.
23. An antibody according to any one of claims 20 to 22, wherein the antibody is a chimeric antibody.
24. An antibody according to any one of claims 20 to 23, wherein the antibody is a humanized antibody.
25. A hybridoma cell line, which produces an antibody according to any one of claims 20 to 24.
26. A method for producing an antibody according to claim 20, characterized by the following steps:
 - initiating an immune response in a non-human animal by administering an hyperimmune serum-reactive antigen or a fragment thereof, as defined in any one of the claims 11 to 14, to said animal,
 - removing an antibody containing body fluid from said animal, and
 - producing the antibody by subjecting said antibody containing body fluid to further purification steps.
27. Method for producing an antibody according to claim 21, characterized by the following steps:
 - initiating an immune response in a non-human animal by administering an hyperimmune serum-reactive antigen or a fragment thereof, as defined in any one of the claims 12 to 15, to said animal,
 - removing the spleen or spleen cells from said animal,
 - producing hybridoma cells of said spleen or spleen cells,
 - selecting and cloning hybridoma cells specific for said hyperimmune serum-reactive antigens or a fragment thereof,
 - producing the antibody by cultivation of said cloned hybridoma cells and optionally further purification steps.
28. Use of the antibodies according to any one of claims 20 to 24 for the preparation of a medicament for treating or preventing *S. agalactiae* infections.
29. An antagonist, which binds to the hyperimmune serum-reactive antigen or a fragment thereof according to any one of claims 11 to 14.
30. A method for identifying an antagonist capable of binding to the hyperimmune serum-reactive antigen or fragment thereof according to any one of claims 11 to 14 comprising:
 - a) contacting an isolated or immobilized hyperimmune serum-reactive antigen or a fragment thereof according to any one of claims 11 to 14 with a candidate antagonist under conditions to permit binding of said candidate antagonist to said hyperimmune serum-reactive antigen or fragment, in the presence of a component capable of providing a detectable signal in response to the binding of the candidate antagonist to said hyperimmune serum reactive antigen or fragment thereof; and
 - b) detecting the presence or absence of a signal generated in response to the binding of the antagonist to the hyperimmune serum reactive antigen or the fragment thereof.
31. A method for identifying an antagonist capable of reducing or inhibiting the interaction activity of a hyperimmune serum-reactive antigen or a fragment thereof according to any one of claims 11 to

- 14 to its interaction partner comprising:
- a) providing a hyperimmune serum reactive antigen or a hyperimmune fragment thereof according to any one of claims 11-14,
 - b) providing an interaction partner to said hyperimmune serum reactive antigen or a fragment thereof, especially an antibody according to any one of the claims 20 to 24,
 - c) allowing interaction of said hyperimmune serum reactive antigen or fragment thereof to said interaction partner to form a interaction complex,
 - d) providing a candidate antagonist,
 - e) allowing a competition reaction to occur between the candidate antagonist and the interaction complex,
 - f) determining whether the candidate antagonist inhibits or reduces the interaction activities of the hyperimmune serum reactive antigen or the fragment thereof with the interaction partner.
32. Use of any of the hyperimmune serum reactive antigen or fragment thereof according to any one of claims 11 to 14 for the isolation and/or purification and/or identification of an interaction partner of said hyperimmune serum reactive antigen or fragment thereof.
33. A process for *in vitro* diagnosing a disease related to expression of the hyperimmune serum-reactive antigen or a fragment thereof according to any one of claims 11 to 14 comprising determining the presence of a nucleic acid sequence encoding said hyperimmune serum reactive antigen and fragment according to any one of claims 1 to 7 or the presence of the hyperimmune serum reactive antigen or fragment thereof according to any one of claims 11-14.
34. A process for *in vitro* diagnosis of a bacterial infection, especially a *S. agalactiae* infection, comprising analysing for the presence of a nucleic acid sequence encoding said hyperimmune serum reactive antigen and fragment according to any one of claims 1 to 7 or the presence of the hyperimmune serum reactive antigen or fragment thereof according to any one of claims 11 to 14.
35. Use of the hyperimmune serum reactive antigen or fragment thereof according to any one of claims 11 to 14 for the generation of a peptide binding to said hyperimmune serum reactive antigen or fragment thereof, wherein the peptide is selected from the group comprising anticalines.
36. Use of the hyperimmune serum-reactive antigen or fragment thereof according to any one of claims 11 to 14 for the manufacture of a functional nucleic acid, wherein the functional nucleic acid is selected from the group comprising aptamers and spiegelmers.
37. Use of a nucleic acid molecule according to any one of claims 11 to 14 for the manufacture of a functional ribonucleic acid, wherein the functional ribonucleic acid is selected from the group comprising ribozymes, antisense nucleic acids and siRNA.